Space Weather Forecast

Issued on Saturday, 03 December 2022 at 13:07 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Daily chance of Moderate flares. Slight chance G1 Minor Storms, mainly early day 2 or late day 4.

Analysis of Space Weather Activity over past 24 hours
Solar Activity: Solar activity is Low with common-class flares observed. The strongest of these was from an emerging area on the northeast limb. There are six regions currently on the visible disk, the large group to the southeast remains the largest feature on the disc. Other spots remain generally small, simple, or have faded.

No Earth-directed CMEs (Coronal Mass Ejections) were observed in the last 24 hours.

Solar Wind / Geomagnetic Activity: The solar wind was indicative of declining fast solar winds from a coronal hole. Elevated to Strong wind speeds to start have declined towards Elevated. Total interplanetary magnetic field was generally weak. The important north-south component also varied weakly. Geomagnetic activity was Quiet to Unsettled (Kp 2-3).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) was at background with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary
Solar Activity: Solar activity is forecast to be Low, but with a chance of rising to Moderate with an ongoing potential for Moderate flares, primarily from the region in the southeast.

Solar Wind / Geomagnetic Activity: A slow coronal mass ejection from 29th Nov may arrive at Earth early on day 2 (4th) +/- 9 hrs. Ongoing fast wind environment is expected to gradually fade through the period easing to perhaps slightly elevated by the end of day 1 (3rd). The fast wind from coronal hole 53 may arrive at Earth from late day 4 (6th), with solar wind speeds perhaps reaching in the region of 550-650 km/s. Quiet to Unsettled with chance of Active intervals are expected through the period. Any coronal mass ejection arrival will bring the chance of a further spell of Active to G1/Minor Storm intervals from late day 1 (3rd) or more likely early day 2 (4th), with the risk reducing by day 3 (5th). Day 4 (6th) may see an early arrival of coronal hole 53-, with only a slight chance of G1/Minor storming due to being a negative feature.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to be at background with no solar radiation storms occurring.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	10	20	10	10
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	25	25	25	25
Very Active	R3 to R5 X	No	5	5	5	5

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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